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**Engineering Note**

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**Project:** Digital Front End motherboard, subrack.

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**Subject:** Digital Front End Board subrack power supply specification

The Digital Front End system consists of several custom 6U subracks, each containing up to 20 motherboards and a crate controller.

It is expected that each subrack will have its own Vicor PFC Mini power supply.

Each Subrack will have three large copper bus bars: one for +3.3V, one for +5V, and one for a shared +3.3V/+5V ground return.

Power supply cables connect to the bus bars at only one location— transition boards block access to the bars and prevent multiple cable connections.

The *worst case* current consumption for a DFE subrack is as follows: **+3.3V @ 145A**, **+5V @ 36A**. These numbers are derived from the current baseline CFT/CPS AXIAL firmware design.

Cabling and fusing from the power supply to the subrack is as follows:

